CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

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Job No.: CTCE/BBMP/W.No.12/KRIDL/GSB-1/GR/2012-13 Date : 04.04.2013

GRADATION FOR GSB (CLOSE GRADED)

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West)**, KRIDL, Bangalore.

Name of work : Improvements to Road at Chikkabanavar Railway Station to Geleyarabalaga Ganesha Temple in Ward No.12, BBMP, Bangalore.

Reference : BBMP/AEE/SSD/DZ/PR/2012-13

Date of Testing : 04.04.2013

Sample Source : GSB Mix Plant Bangalore. **Oven Dry Wt (gm) :** 12520

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
75.0	0	0	0.00	0	100
53.0	228	228	1.82	98.18	80-100
26.50	2138	2366	18.90	81.10	55-90
9.50	2897	5263	42.04	57.96	35-65
4.75	2810	8073	64.48	35.52	25-55
2.36	1564	9637	76.97	23.03	20-40
0.425	1478	11115	88.78	11.22	10-25
0.075	895	12010	95.93	4.07	3-10
Total			12520		

AE Wadno 12

AE/AEE/

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading I

Information is furnished by the Agency.

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Bangalore - 560 079

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Job No.: CTCE/BBMP/W.No.12/KRIDL/WMM/Gradation/2012-13

04.04.2013

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements to Road at Chikkabanavar Railway Station to Geleyarabalaga Ganesha Temple in Ward No.12, BBMP, Bangalore.

Reference : BBMP/AEE/SSD/DZ/PR/2012-13

Date of Testing : 04.04.2013

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **10866**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	365	365	3.4	96.6	95-100
22.4	1790	2155	19.8	80.2	60-80
11.2	3165	5320	49.0	51.0	40-60
4.75	1658	6978	64.2	35.8	25-40
2.36	1563	8541	78.6	21.4	15-30
0.600	1125	9666	89.0	11.0	8-22
0.075	905	10571	97.3	2.7	0-8

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BM/Bitumen/2012-13

25.04.2013

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 164 & AASHTO T 30

CLIENT	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Road at Chikkabanavar Railway Station to Geleyarabalaga Ganesha Temple in Ward No.12, BBMP, Bangalore.
REFERENCE	BBMP/AEE/SSD/DZ/PR/2012-13
SAMPLE I/D	Roads from Chikkabanavara Railway Station to Geleyara balaga Ward No.12
DATE OF TESTING	25.04.2013

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482	482.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	18	17.50
7. Bitumen content in %	3.60	3.50
8. Average	**3.55**	

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ಸಹಾಯಕ ಕಾರ್ಯನಿರ್ವಾಹಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ,
ಗ್ರೇಟರ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ

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Job No.: CTCE/BBMP/W.No.12/KRIDL/BM/Bitumen/2012-13 25.04.2013

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

AASHTO T 164 & AASHTO T 30

CLIENT	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Road at Chikkabanavar Railway Station to Geleyarabalaga Ganesha Temple in Ward No.12, BBMP, Bangalore.
REFERENCE	BBMP/AEE/SSD/DZ/PR/2012-13
SAMPLE I/D	Roads from Chikkabanavara Railway Station to Geleyara balaga Ward No.12
DATE OF TESTING	25.04.2013

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	26.3	5.46	5.46	94.54	90-100
13.2	88.5	18.36	23.82	76.18	56-88
4.75	261.53	54.26	78.08	21.92	16-36
2.36	73.25	15.20	93.27	6.73	4-19
0.3	16.2	3.36	96.63	3.37	2-10
0.075	4.8	1.00	97.63	2.37	0-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	27	5.60	5.60	94.40	90-100
13.2	95.87	19.87	25.47	74.53	56-88
4.75	253.4	52.52	77.98	22.02	16-36
2.36	60.8	12.60	90.58	9.42	4-19
0.3	26.9	5.58	96.16	3.84	2-10
0.075	5.2	1.08	97.24	2.76	0-8

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Job No.: CTCE/BBMP/W.No.12/KRIDL/SDBC/Bit/2012-13 27.04.2013

BITUMEN CONTENT DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AASHTO T 164 & AASHTO T 30

CLIENT	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Road at Chikkabanavar Railway Station to Geleyarabalaga Ganesha Temple in Ward No.12, BBMP, Bangalore.
REFERENCE	BBMP/AEE/SSD/DZ/PR/2012-13
SAMPLE I/D	Roads from Chikkabanavara Railway Station to Geleyara balaga Ward No.12
DATE OF TESTING	27.04.2013

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474.5	475
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	25.5	25.00
7. Bitumen content in %	5.10	5.00
8. Average	**5.05**	

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BITUMEN CONTENT AFTER GRADATION DETERMINATION OF SEMI DENSE BITUMINOUS CONCRETE MIX

AASHTO T 164 & AASHTO T 30

CLIENT	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements to Road at Chikkabanavar Railway Station to Geleyarabalaga Ganesha Temple in Ward No.12, BBMP, Bangalore.
REFERENCE	BBMP/AEE/SSD/DZ/PR/2012-13
SAMPLE I/D	Roads from Chikkabanavara Railway Station to Geleyara balaga Ward
DATE OF TESTING	27.04.2013

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-4 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	23.1	4.87	4.87	95.13	90-100
4.75	255	53.74	58.61	41.39	35-51
2.36	55.42	11.68	70.29	29.71	24-39
1.18	40.36	8.51	78.79	21.21	15-30
0.3	35.8	7.54	86.34	13.66	9-19
0.075	32.91	6.94	93.28	6.72	3-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-4 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
13.2	0	0	0	100	100
9.5	31.5	6.63	6.63	93.37	90-100
4.75	265.3	55.85	62.48	37.52	35-51
2.36	55.3	11.64	74.13	25.87	24-39
1.18	31.24	6.58	80.70	19.30	15-30
0.3	27.12	5.71	86.41	13.59	9-19
0.075	38	8.00	94.41	5.59	3-8

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